EMPLOYMENT AND TAX BURDEN ON LABOR: A LEGAL IMPLICATION

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Abstract

High unemployment and widespread informality in the labor markets are challenges to sustainable economic growth in developing countries. This paper analyzes the impact of tax burden on labor as an important determinant of formal employment. The purpose of the research is to estimate the size of the tax wedge and to investigate the relationship between employment and tax wedge, to quantify the impact, of the Albanian economy. To analyze the impact of tax wedge on employment we apply the autoregressive distributed lag (ARDL) method, quarterly data for the period 2000Q1–2023Q4. The paper demonstrates a negative relationship between employment and tax wedge that is strong and significant in the long run. The study supports considering the decrease of the employer's social security contributions in order to improve employment. The results also show that real per capita gross domestic product (GDP) has a positive but not significant relationship with employment, supporting that growth does not fully generate new jobs. The impact of a minimum wage increase on aggregate employment is small and not statistically significant.

Keywords: Tax Wedge, Employment, Economic Growth

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1. INTRODUCTION

Analyzing the relationship between employment and tax burden is very important for designing the appropriate policies for increasing employment and dealing with the high informality of the labor market in Albania. The increase in labor mobility in the last decades has placed countries with higher tax rates in an unfavorable position compared to those with lower tax rates. There is considerable evidence that the fiscal policy that countries follow is interdependent (Keen & Konrad; 2012; Davies & Vogel, 2011; Anderson et al., 2002).

There are many determinant factors of labor demand and labor supply, such as national policies, inflation, the minimum wage law, collective bargains, and tax policies. In this study, we are focused on the impact of labor taxes, which include personal income taxes and compulsory social security contributions paid by both employees and employers, on discouraging employment. The measure of tax wedge, in this study, is defined as the ratio between the amount of taxes paid by an average single worker, without children at 100% of average earnings. The tax relief is applied for each dependent child under the age of 18, by the family member with the highest annual taxable income through the tax return in the amount of ALL 48,000 per year. For an annual income less than ALL 1,200,000 children's education deduction is ALL 100,000 per year. According to the Organisation for Economic Co-operation and Development (OECD, 2024), fiscal disincentives for the second earner are larger where tax relief is computed at the household level.

Social security contributions have a decreasing trend during the period under investigation. The main part of reform is focused on employers' contributions in order to leave an unaffected net wedge of employees. The employers' contributions were reduced by about 50%, between 2000–2014, from 34.2% in 2001 to about 16.7% in 2010. Personal income tax has changed from a progressive tax rate applied until 2007 (0%, 5%, 10%, 15%, 20%), in flat tax rate of 10% from 2008 until the end of 2013, and to

a progressive tax (0%, 13%, 23%) from first January 2014 until present. After the implementation of progressive tax in 2014 there is an increase of about 22% in tax wedge for high earners group of workers. The social security contribution constitutes the main tax burden on labor in Albania, they account for about 2/3 of the labor tax burden.

The main objective of the paper is to determine the relationship between the tax wedge and employment rate and to determine the magnitude of the impact. The paper is based on previous research (Jousten et al., 2022), that examined the impact of labor taxation on labor market outcomes in the Western Balkan countries. The empirical analysis is extended by employing the autoregressive distributed lag (ARDL) model that includes several lags of independent and dependent variables and allows us to determine the short-run and the long-run relationship between employment, tax wedge, and selected control variables. Informal employment remains a key challenge to the Albanian government. About 57% of Albanian workers are estimated to be in informal employment, excluding the agriculture sector informal employment is about 32.2%, (International Labour Organization [ILO], 2020). Excessive tax burden and poor regulatory quality discourage formal employment. As part of employment protection legislation, the role of minimum wage increase in total employment is estimated. The rationale for including this variable in the model is the considerable number of employees that are paid the minimum wage, about 16% of employees in the year 2022, based on the data reported by the Institute of Statistics (n.d.).

The remainder of the paper is structured as follows. Section 2 presents a theoretical and empirical literature review of the impact of labor taxes on employment. Section 3 explains the methodology of the study and data set. Section 4 gives the results of empirical estimation, the short-run, and the long-run estimation, as well as the robustness test of the model. Section 5 discusses the results and compares them with previous research results. Section 6 draws the conclusion and provides policy recommendations.

2. LITERATURE REVIEW

Labor taxes bring differences between real gross labor costs for employers and the real net wedge that employees receive. The differences created from taxes between labor costs and net wedges are called tax wedges. Keeping a low competitive tax wedge is important to increase employment and to attract and retain qualified employees. The impact of taxes in the labor market is based on the tax wedge, because the gross real wedge affects the firms' labor demand, while the net wedge determines the size of labor supply.

If the increase in personal income tax does not change the gross wage, then the labor demand is not affected directly. The impact of personal income tax on labor supply affects both the reservation wage and working hours supplied. An increase in personal income tax will reduce participation in the labor market because it will reduce the tax wedge below the reservation wage, for a part of the employees. The impact on the working hours is not clearly determined from a theoretical point of view and depends on the magnitude of the substitution effect relative to the income effect. On one side, higher tax rates make free time more attractive and encourage employees to work less. On the other side, higher tax rates reduce income and increase the incentive to work. Because these two effects move in opposite directions, the response of the workers to the increase in personal income tax is not clearly determined. Empirical studies support the fact that an increase in tax rate brings to reduction in the efforts to work because it decreases the labor income of employees and could also increase the cost of employers (Manski, 2012; OECD, 2011).

In developed countries, the tax system is more complex and progressive, and the flat tax has been broadly used in Central and Eastern European countries after the early 1990s, where not only unemployment was high but there was also a large part of the population with primary and secondary education (Radulescu et al., 2014). Evidence of a more limited role of personal income tax in developing countries in both revenue collection and redistribution impact relative to advanced economies is provided by Benedek et al. (2022). The impact of progressive taxes on the labor supply has been studied by many researchers. Empirical support in favor of the implementation of a flat tax to increase the labor supply by decreasing marginal tax rates is found by Decoster et al. (2008), Easterook (2008), Duncan and Peter (2009), and Kiss (2013).

Other studies are focused on the labor tax burden for unskilled workers. Evidence of a more sensitive reaction to changes in labor taxes and benefits programs of unskilled workers relative to skilled workers is found by Meghir and Phillips (2008). Based on the panel of 21 OECD countries, Lehmann et al. (2014) have found support that a more progressive personal income tax, reduces the tax burden for unskilled workers relative to qualified workers. Because unskilled workers react more to tax changes compared to skilled workers, an increase in employment for this category is expected. The European Commission, Directorate-General for Employment, Social Affairs and Inclusion (2023) also supports that a decrease in labor taxes has a greater impact on the population groups where employment is more responsive to tax incentives. The relationship between tax wedge and skills is studied by Gora et al. (2006) and Gora et al. (2009). They found evidence of a high tax wedge on unskilled workers.

The effect of social security contribution on wages and employment is also undetermined from a theoretical point of view. This comes because social security contributions bring also benefits to workers. In the case of flexible wages and employees appreciating benefits as much as contribution costs, then the change in wage taxes must be shifted from firms to employees in the form of wage reductions, leaving employment unchanged. If wages are sticky and benefits are not appreciated equal to the contribution costs, the shift will not be complete from employer to employee, and therefore an increase in these taxes will affect employment. The magnitude of the shift depends on the elasticity of demand and supply for labor. The higher the elasticity of demand for labor and the lower the elasticity of supply for labor, the higher is magnitude of shift and the lower is employment effect.

Empirical research on the effects of social security contribution is not conclusive because labor taxes depend on the structure of the labor market and different institutions that are different in different countries. However, most empirical studies support the fact that the tax effect is different in different groups of workers with different skills. For Latin American countries, Lora and Fajardo (2012) have found empirical support that labor taxes have a negative impact on employment and increase labor costs when the benefits are not equally valued by employees' contribution.

Empirical studies based on panel data support the negative relationship between tax wedge and employment. For a panel of 27 European Union (EU) countries, Dolenc and Laporšek (2010) concluded that an increase of about 1% in tax wedge increases unemployment by about 0.04%. The authors concluded that EU countries should continue the trend of reducing the tax wedge, to further increase employment. The role of tax wedge and social security contributions on unemployment for eight EU transition economies is studied by Öztürk (2021). The paper supports that tax wedge and social security contributions were significant causes of unemployment. Many empirical studies determine the tax wedge as a significant determinant of unemployment in OECD countries, such as Celikay (2020) for the 34 OECD countries and Kalaš et al. (2022) for 36 OECD countries. They found that a 1% increase in tax wedge decreased the employment rate by about 0.33%. Other authors (Causa et al., 2018; Akgun et al., 2017; Paturot et al., 2013) investigated the relationship between tax rate, tax wedge, and income distribution for the OECD countries. They found for the OECD countries that the overall progressivity PIT on wage has declined. The labor taxes have a considerable effect on income distribution. Aktaş (2023) found that the tax wedge is negatively related to unfair income distribution, for a single person with no children, earning 167% of the average wage, and a one-earner married couple with two children, earning 100% of average wages.

Individual countries' studies have supported the negative relationship between tax wedge and employment. For Sweden, Thomas (1998) proved that a 1% increase in labor taxes increases labor costs by half a percent for a period of five to ten years. The negative relationship between tax wedge and employment is proved empirically for Croatia by Kesner-Škreb (1999), Deskar-Škrbić et al. (2018), and Laenen et al. (2011) for Belgium. The authors have recommended that Belgium decrease in tax wedge through the reduction of employer social contributions leaving the net wedge of employment unaffected. The response of the Spanish labor supply to income tax changes is studied by Cutanda and Sanchis-Llopis (2023) based on stimulation estimations. They found a small impact, accounting for less than 1% of the unemployment rate, even when tax rates are increased by 3%. The negative impact of labor taxes on employment and wages is found by Kugler and Kugler (2002) for Colombia. Their estimates have shown that a 10% increase in labor taxes is associated with a reduction in wages of about 2% and a reduction in employment of about 4%. Tax changes' effects on labor market outcomes depend on the state of the economy at the time of the change. In times of higher unemployment, the effect of tax change on employment decreases (Demirel, 2020). The European Commission, Directorate-General for Employment, Social Affairs and Inclusion (2020) supports the reduction of tax wedge on labor in order to increase employment in the EU countries and considers also the ways of financing the labor tax cut. Improving tax governance is a financial source that helps increase revenues in all countries. The specific financing strategy should be country-based, considering the country's fiscal space, and the possibility of shifting to other taxes or reducing government expenses.

In Albania, tax policy is broadly used to increase employment and competitiveness, but still, in the country, the unemployment rate is high (11.05%, 2023) and informality especially in the labor market is present at concerning levels. The youth unemployment rate is about double the overall unemployment rate (Rovo et al., 2024). For unskilled workers, the policy of zero personal income tax rates is broadly used to stimulate employment in this group. A high tax wedge on low income is a result of high social security contributions that are applied uniformly to income.

3. DATA AND METHODOLOGY

The methodology scope of this paper is to investigate whether changes in labor taxes are strongly related to changes in employment in Albania. In the literature, it is broadly used the regression analysis for estimating the impact of labor taxes on employment. The choice of regression model is determined by the time series properties of a given data and research objectives. In the case that all the variables are stationary, the ordinary least squares (OLS) method and vector autoregression (VAR) approach are recommended. In the case of mixed variables, the ARDL model is considered more appropriate (Shrestha & Bhatta, 2018).

The ARDL methodology has many applications related to labor market analysis, such as Mauro and Van der Willigen (1997) for estimating the German labor market, Özker (2020) for estimating the impact of the tax wedge on investment in the OECD countries, and Lee and Lee (2014) for estimating labor force participation.

The alternative research methodologies used for the estimation of fiscal policy impact on the labor market are VAR, and error correction model (ECM). The VAR can be more suitable than the ARDL approach for impulse response functions and dynamic forecast. Cointegrating vector from ARDL is equivalent to that from an ECM (Hassler & Wolters, 2006).

We rely on the ARDL method based on quarterly data for the period 2000Q1–2023Q4. The selection of the estimation method is under the research question (quantifying the short run and long run impact), as well as technical, ARDL estimation performs better in a small sample size when there is a long run relationship between the underlying variables.

The linear regression equation has the form:

$$EMP_t = \alpha_0 + \alpha_1 TW_t + \alpha_2 GDPP_t + \alpha_3 INF_t + \varepsilon_t \quad (1)$$

Table 1. Data summary

Variable	*Description*	*Source*
Employment (EMP)	Employment rate total, age 15–65	Albanian Institute of Statistics (INSTAT)
Tax wedge (TW)	Singles, earning 100% of the average wage	Authors calculation based on OECD methodology
Real per capita GDP (GDPP)	In logarithm form	INSTAT
Inflation rate (INF)	Based on the consumer price index	INSTAT

We use as a control variable the *inflation rate* and *real per capita GDP*. The selection of control variables is based on economic theory and empirical evidence. The positive relationship between economic growth and employment is developed by Okun (1963). Evidence that economic growth leads to employment creation in developing countries is found by Khan (2007), Meyer (2017), and Mushtaq et al. (2022). The negative relationship between inflation and unemployment is developed by Phillips (1958). For the long run, Phelps (1967, 1968) and Friedman (1968) determined that the inverse relationship does not hold. Empirical evidence supports a positive relationship between employment and inflation in the long run based on the U.S. data (Angelov, 2023). Evidence that inflation impedes the job creation, especially young is found by Camara et al. (2023).

The model allows us to quantify the impact of tax wedge, inflation, and the growth rate of real per capita GDP on the employment rate.

Table 2. Descriptive statistics

Variable	*Mean*	*Std. Dev.*	*Maximum*	*Minimum*	*Observation*
Employment	57.335	3.951	67.700	47.100	96
Real per capita GDP	12.522	0.342	12.951	11.737	96
Tax wedge	32.395	3.253	37.500	29.030	96
Inflation rate	2.585	1.492	7.770	0.050	96

For determining the cointegration among variables, the Bound test is used (Pesaran et al., 2001).

The equation of the ARDL cointegration test is given below:

$$\Delta EMP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta EMP_{t-i} + \sum_{i=0}^{q} \alpha_2 \Delta TW_{t-i} + \sum_{i=0}^{q} \alpha_3 \Delta GDPP_{t-i} + \sum_{i=0}^{q} \alpha_4 \Delta INF_{t-i} + y_1 EMP_{t-i} + y_2 TW_{t-i} + y_3 GDPP_{t-i} + y_4 INF_{t-i} + \varepsilon_{it} \quad (2)$$

The p is the number of lags for the dependent variable, *employment* (*EMP*); q is the number of lags for the regressors (*tax wedge — TW, real per capita GDP — GDPP, inflation rate — INF*); Δ is the change in investigated variables.

The error correction term (ECT) incorporates the long-run and the short-run information about the variables of interest and is given below:

$$\Delta EMP_t = a_0 + \sum_{i=1}^{p} a_1 \Delta EMP_{t-i} + \sum_{i=1}^{q} a_2 \Delta TW_{t-i} + \sum_{i=1}^{q} a_3 \Delta GDPP_{t-i} + \sum_{i=1}^{q} a_4 \Delta INF_{t-i} + ECT_{t-1} + \varepsilon_t \quad (3)$$

The coefficients α_1, α_2, α_3, and α_4 are the short-run dynamic coefficients of the model's adjustment to the long run.

4. RESULTS

The results for testing the stationarity of variables are reported in Table 3. For estimating the unit root test, we are based on the augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test. The ADF test checks if the mean of the time series is constant over time and the PP test checks if the variance of the time series is constant over time.

Based on the data reported, we cannot reject the null hypothesis (H_0) for employment, tax wedge, inflation rate, and the real per capita GDP. These time series have a unit root and are integrated of the first order I(1). The ARDL model is used for series with different orders of integration I(0) and I(1) (Pesaran & Shin, 1999; Peseran et al., 2001). The model could be applied for the time series with the same order of integration to test whether there is a long-run relationship between variables if no time series is integrated of the second order I(2).

Table 3. Unit root test

Variable	*ADF test*				*PP test*			
	Level		*First difference*		*Level*		*First difference*	
	t-stat	*Prob.*	*t-stat*	*Prob.*	*t-stat*	*Prob.*	*t-stat*	*Prob.*
Real per capita GDP	-2.397	0.145	-3.082	0.031	-2.824	0.058	-11.52	0.000
Employment	-1.544	0.506	-7.537	0.000	-0.732	0.832	-7.699	0.000
Tax wedge	-2.464	0.127	-3.658	0.006	-1.624	0.466	-3.994	0.002
Inflation rate	-2.164	0.220	-3.809	0.004	-2.730	0.072	-4.612	0.000

Note: H_0: Variable has a unit root.

The selection of the optimal lag length is very important for the Bound test using the ADRL model. The optimal lag length criteria that are used in this paper rely on the Akaike information criterion (AIC), Schwarz information criterion (SC), Hannan-Quinn criterion (HQ), sequential modified LR test statistics, and final prediction error (FPE).

Table 4. Optimal lag selection criteria

Lag	*LR*	*FPE*	*AIC*	*SC*	*HQ*
1		0.000682	1.223619	1.476983	1.325693
2	77.21917	0.000327	0.486468	0.993196*	0.690616*
3	12.94001	0.000341	0.527216	1.287308	0.833438
4	31.77001*	0.000276*	0.313735*	1.327191	0.722031

*Note: * indicates the lag order selected by the criterion.*

Three tests, the LR, FPE, and AIC, indicate that the number of optimal lags is four. Two tests, SC and HQ, indicate the number of optimal lags is two. For the small sample, AIC and FPE perform better than other criteria (Liew, 2004). The further analysis is based on four lags to estimate the possible long-run relationship between variables.

Table 5. Bound test for cointegration

Variable	*Value*	*Significance*	*I(0)*	*I(1)*
EMP = f (*TW, GDPP, INF*)	F-stat. = 4.92 k = 3	10%	2.72	3.77
		5%	3.23	4.35
		2.5%	3.69	4.89
		1%	4.29	5.61

The result of the bound test is reported in Table 5. Based on the reported data, H_0 of no cointegration is rejected. The F-statistic is above the lower bound I(0) and the upper bound I(1) at significance levels 10%, 5%, and 2.5%. The test is inconclusive at a 1% level of significance. Employment, tax wedge, real per capita GDP, and inflation are co-integrated at the level of 10%, 5%, and 2.5%. According to Pesaran et al. (2001), the significance of 5% is suitable for deciding about cointegration.

4.1. Long-run analysis

The findings reveal that the tax wedge has a negative effect on employment that is strong and significant in the long run. An increase of one percentage point in the tax wedge decreases employment by 1.47%, *criteriums paribus*. The impact of real per capita GDP on employment is positive but not statistically significant. There is not a long-run relationship between real per capita GDP and employment. The impact of the inflation rate is positive and significant in the long run.

Table 6. Long-run ADRL parameter estimation

Variable	*Estimates*	*Std. Error*	*t-statistic*	*P-value*
Tax wedge	-1.471**	0.517	-2.842	0.006
Real per capita GDP	2.144	3.657	0.586	0.559
Inflation rate	2.803**	0.926	3.025	0.004

*Note: * Significant at 10%; ** significant at 5%; *** significant at 1%.*

4.2. Short-run analysis

According to the AIC, the short-run estimated model has the structure (4,3,3,0). The error correction term is negative, smaller than one, and statistically significant at a 1% level of significance. The rate of convergence from the short-run to the long-run equilibrium is estimated to be about 12.2%. Short-run deviations from the long-run equilibrium are corrected each year by 12.2% towards the long-run equilibrium. The result supports a low speed of adjustment. The findings reveal that the first and the third lag of the dependent variable has a positive impact on employment. However, the second lag exhibits a negative impact on employment. Similar to the long run, real per capita GDP is found to have a positive impact on employment in the short run in all the lag. The effect of the tax wedge on employment is not significant in the short run.

Table 7. Short-run ADRL parameter estimation

Variable	*Estimates*	*Std. Error*	*t-statistic*	*P-value*
Δ(Employment (-1))	0.153	0.101	1.516	0.134
Δ(Employment (-2))	-0.180	0.100	-1.779	0.080
Δ(Employment (-3))	0.336**	0.106	3.164	0.002
Δ(Tax wedge)	-0.309	0.215	-1.436	0.155
Δ(Tax wedge(-1))	-0.384	0.264	-1.452	0.151
Δ(Tax wedge(-2))	0.724***	0.206	3.499	0.001
Δ(GDPP)	3.294	1.789	1.841	0.071
Δ(GDPP (-1))	0.118	1.882	0.062	0.951
Δ(GDPP (-2))	4.985**	1.908	2.612	0.011
ECM_{t-1}	-0.122***	0.026	-4.579	0.000
Adj. R^2	0.46			
Durbin-Watson	2.01			

*Note: * Significant at 10%; ** significant at 5%; *** significant at 1%.*

4.3. Testing the model accuracy

For testing the model accuracy, first, we based on the model diagnostic tests. For testing the stability of the model, we based on the Ramsey RESET test, CUSUM test, and CUSUM of squares test.

The Ramsey test affirms that the examined model is stable, and we have meaningful results. The probability value of the F-statistic is greater than 5%, therefore we reject H_0 which means that there are no specifications errors in the model. The model is appropriately selected.

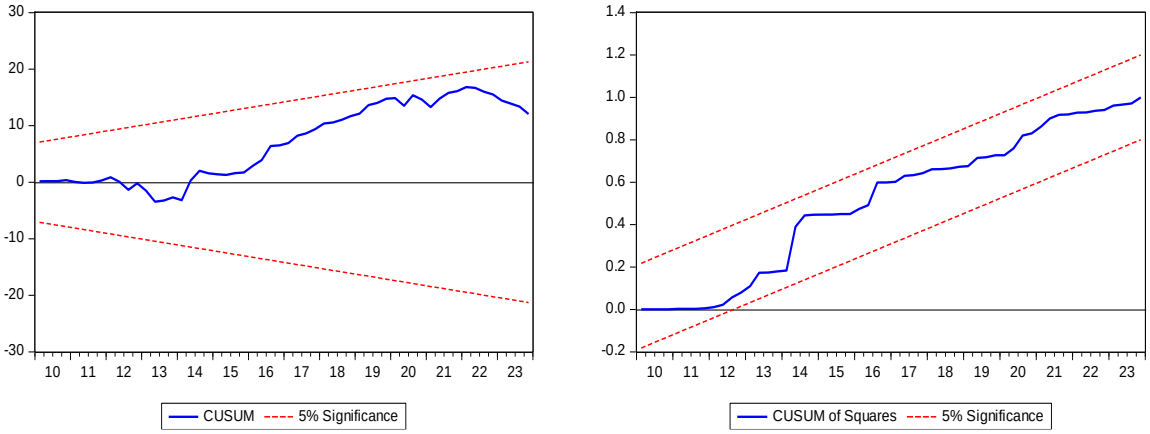
Table 8. The Ramsey test summary value

	Value	*df*	*Probability*
F-statistic	1.281	(1.57)	0.262
t-statistic	1.312	57	0.262

F-test summary:			
	Sum of squares	*df*	*Mean square*
Test SSR	0.798	1	0.798
Restricted SSR	36.316	58	0.626
Unrestricted SSR	35.517	57	0.623

The stability of the model is also tested by using the cumulative sum of recursive residuals (CUSUM) and CUSUM of recurve squares (CUSUMQ).

Figure 1. Stability test using CUSUM and CUSUMQ



Based on Figure 1, we conclude that the long-run paraments of the model are stable, the plot of the test (blue line) is between the confidence band of 5% (Brown et al., 1975). H_0 cannot be rejected. The short and the long-run estimates are efficient.

Table 9. Residual diagnostic test of the model

Test specifications	*Value*	*Probability*
Normality test, Jarque-Bera test	0.205	0.902
Breusch-Godfrey serial correlation LM test	0.335	0.716
Heteroskedasticity, ARCH test	3.821	0.164

Based on a diagnostic test, the Jarque-Bera test of normality affirms that the selected model has a normal distribution. The p-value of Jarque-Bera is greater than 0.5. The Breusch-Godfrey test of serial correlation affirms that there is no autocorrelation since the p-value of serial correlation is not significant. For testing heteroskedasticity we are based on the ARCH test. The p-value is not significant which affirms no heteroskedasticity in the residual of the model.

4.4. Additional explanatory variable

In addition, we include other explanatory variables to validate the results of the base model. To test for the consistency of the regression we add one more explanatory variable, the *minimum wage growth*. There is a statutory minimum wage in Albania. The minimum wage is EUR 400 per month since March 1, 2023. Even though in the last decade, a statutory minimum wage has increased, its value is low not only compared with the EU countries but also with neighboring countries. In Serbia, in the year 2024, the minimum wage is about EUR 544.22, in Monegro EUR 532.5, and North Macedonia EUR 542. Empirical studies provide evidence of the employment effect on less-skilled workers (Neumark & Washer, 2006) and (Neumark & Munguía Carella, 2021). Analysis of the effect of minimum wage on employment is difficult in countries with large informal sectors. An increase in minimum wage can force the firms to declare the larger share of the workers' earnings, in a country like Albania, with considerable wage underreporting.

Table 10. ADRL parameter estimation

Variable	*Estimates*	*Std. Error*	*t-statistic*	*P-value*
The long run				
Tax wedge	-1.398**	0.443	-3.154	0.003
GDPP	4.868	2.457	1.337	0.186
Inflation rate	3.105**	0.929	3.077	0.004
Min wage growth	-0.087	0.245	-0.357	0.072
The short run				
Δ(Employment (-1))	0.127	0.107	1.176	0.244
Δ(Employment (-2))	-0.194	0.107	-1.804	0.076
Δ(Employment (-3))	0.306*	0.116	2.650	0.011
Δ(Tax wedge)	-0.290	0.230	-1.261	0.213
Δ(Tax wedge(-1))	-0.386	0.280	-1.376	0.174
Δ(Tax wedge(-2))	0.694**	0.216	3.202	0.002
Δ(GDPP)	3.837	1.959	1.858	0.065
Δ(GDPP (-1))	0.383	2.058	0.186	0.853
Δ(GDPP (-2))	5.350**	2.077	2.575	0.013
ECM_{t-1}	-0.134***	0.029	-4.582	0.000
Adj. R^2	0.50			
Durbin-Watson	2.09			

*Note: * Significant at 10%; ** significant at 5%; *** significant at 1%; Δ is the shift parameter.*

Minimum wage growth is stationary in level. The ADRL model performs well with the series that are integrated of order one and zero. The model is estimated based on four lags. Adding the minimum wage growth has not changed the significance and the sign of variables included in the model. The impact on employment of minimum wage growth is not statistically significant.

5. DISCUSSION

The study concludes that the tax wedge has a negative impact on employment rate that is statistically significant. The research findings are in accordance with economic theory and previous research. Labor taxes have a negative and significant effect on employment. Previous studies (Jousten et al., 2022; Arandarenko & Aleksić, 2019) found that high SSC rates in the Western Balkans have created a high tax wedge and adversely affected investment, especially in low-wage sectors.

The results exhibit that the real per capita GDP does not have a long-run relationship with the employment rate. Previous research by Blacëri (2023) based on annual data for the period 1980 to 2021 found no long-run equilibrium relationship between real GDP and the unemployment rate in Albania. Evidence of economic growth not related to the reduction of unemployment is found by Misini and Mustafa (2022) in Kosovo. Other studies (Oruč & Bartlett, 2018; Brodmann et al., 2020) support that economic growth fails to generate sufficient demand for labor in Albania.

The result further supports a positive long-run relationship between the inflation rate and employment in Albania. The positive relationship between inflation and employment in the short run can be explained by the fact that inflation reduces the real wages since the wage adjustment lags the price rises, then the employment could rise. In the long run, the positive relationship between inflation and employment can be explained by the fact that moderate inflation can stimulate economic activity. Albania has applied formal inflation targeting since 2005, but the strategy was introduced earlier, in the year 1999. The inflation targeting has been successful in anchoring inflation within the determined band most of the time. Empirical research is not conclusive about the relationship between inflation and employment. A positive long-run relationship between inflation and employment is found by Angelov (2023). The nonlinear relationship between inflation and job creation is found by Camara et al. (2023).

6. CONCLUSION

Based on the ARDL approach for the period 2000Q1–2023Q4, the paper estimated the impact of the tax wedge on employment for the Albanian economy. The reform of personal income tax and obligatory social security contribution have a direct impact on labor costs and was the object of our analysis. Labor taxes lead to differences between real and gross labor costs for employers and the net wedge that employees receive.

Albania has used the policy of low taxes to increase the country's competitiveness. The trend of tax wedge has been decreasing, with the minimum values during the time the country implemented the flat personal income tax, during 2008–2013. After the implementation of progressive personal income tax in 2014, there has been an increase of about 22% in tax wedge for the higher income group.

This paper provides evidence that the tax wedge has a negative and significant effect on the employment rate in Albania in the long run. A major part of the labor tax burden comes from obligatory social security contributions (16.7% employers and 11.2% employees). The personal income tax is applied at a zero-tax rate for low-income (up to ALL 40,000). For the average single worker, at 100% of average earnings, that is an object of this study, personal income tax is 13% of the amount above ALL 30,000 until ALL 200,000. The applied personal income tax rate is 3% higher than the flat income tax of 10%, which also applies a zero rate for income up to ALL 10,000. We do not recommend decreasing the personal income tax, because the low tax rate has limited distribution effects. The government might consider decreasing the employer social security contribution that is related to labor demand to decrease the tax wedge and increase employment. The employer social security contribution in Albania is higher than in other Western Balkan countries; in Serbia, it is 15.15%, Montenegro — 6%, Bosnia and Herzegovina — 10.5%, and Kosovo — 5% (Worldwide Tax Summary,

https://taxsummaries.pwc.com). Reducing employer social security contributions supports not only job creation but also improves the cost competitiveness of the firms. The average monthly salary in Albania is the lowest in the Western Balkan countries (Testaverde et al., 2024). The higher tax burden on labor influences increasing labor mobility. High-skill workers are highly geographically mobile, and unskilled workers are both geographically and occupationally mobile.

The reduction of the tax burden on labor needs financial sources to be feasible to implement. In the year 2020, due to the COVID-19 pandemic, the public debt in Albania reached the highest level of 74.3% of GDP, and the fiscal deficit reached 6.7% of GDP. Fiscal consolidation, based on the organic budget law, managed to bring the public debt as a percentage of GDP to 58.9%, and fiscal deficit as a percentage of GDP to 1.4% in the year 2023. Financing the labor tax reduction might rely on shifting the tax burden to other taxes and improving the general tax governance. Employment in the agriculture sector is about one-third of the total, which poses constraints for raising revenues.

In Albania, there are many formal workers paid the minimum wage (about 16% of total employees). Despite the increase in the last few years, the minimum wage remains the lowest in Europe. The model provided evidence that an increase in the minimum wage has not significantly affected employment. The aim of the policy was to engage more people in the labor market, as well as to compensate for inflation. According to our findings, this objective was not met. The policy implication is that the tax burden on labor is important in determining the labor market outcomes of the Albanian economy.

The study suffers from some limitations. The effect of labor institutions on employment is not fully considered due to a lack of data quarterly for variables such as replacement ratio and union density. The study investigated the relationship between minimum wage growth and employment. The effect is small and not significant, for aggregate employment. Future research could be extended and consider the impact of institutional variables such as corruption on employment. The study is based on macro data and does not address decreasing the tax rate for a specific group of the population or a given branch of the economy.

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